STATE OF CALIFORNIA

Prescriptive Residential Alterations That Do Not Require HERS Field Verification

CALIFORNIA ENERGY COMMISSIO

CEC-CF IN-ALT-00-E (Nevised 00/14)	CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE	CF1R-ALT-05-E
Prescriptive Residential Alterations That Do Not Require HERS Field Verification	(Page 1 of 7)
Project Name:	Date Prepared:

This compliance document is only applicable to simple alterations that do not require HERS verification for compliance. When HERS verification is required, a CF1R-ALT-01 shall first be reqistered with a HERS Provider Data Registry.

Alterations to Space Conditioning Systems that are exempt from HERS verification requirements may use the CF1R-ALT-05 and CF2R-ALT-05 Compliance Documents. Possible exemptions from duct leakage testing include: less than 40 ft of ducts were added or replaced; or the existing duct system was insulated with asbestos; or the existing duct system was previously tested and passed by a HERS Rater. If space conditioning systems are altered and are not exempt from HERS verification, then a CF1R-ALT-02 must be completed and registered with a HERS Provider Data Registry.

Alterations that utilize close Cell Spray Polyurethane Foam (ccSPF) with a density of 1.5 to less than 2.5 pounds per cubic foot having an R-value other than 5.8 per inch, or Open Cell Spray Polyurethane Foam (ocSPF) with a density of 0.4 to less than 1.5 pounds per cubic foot having an R-value of 3.6 per inch, shall complete and register a CF1R-ALT-01 with a HERS Provider Data Registry.

If more than one person has responsibility for installation of the items on this certificate, each person shall prepare and sign a certificate applicable to the portion of construction for which they are responsible. Alternatively, the person with chief responsibility for construction shall prepare and sign this certificate for the entire construction. All applicable Mandatory Measures shall be met. Temporary labels shall not be removed before verification by the building inspector.

A. GENERAL INFORMATION						
01	Project Name:		02	Date Prepared:		
03	Project Location:		04	Building Front Orientation (deg or cardinal):		
05	CA City:		06	Number of Altered Dwelling Units:		
07	Zip Code:		08	Fuel Type:		
09	Climate Zone:		10	Total Conditioned Floor Area (ft ²):		
11	Building Type		12	Slab Area (ft ²)		
13	Project Scope:					

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Project Name:	Date Prepared:

01	02	03	04	05	06	07	08	09	10	11	12	13
01	02	03	04	03	00	07	1	l	10	t		l
ļ					R-value	Proposed			Minimum Required			
Method of	Roof		CRRC Product ID		Deck	Initial Solar	Aged Solar	Thermal	SRI	Aged Solar	Thermal	SRI
Compliance	Pitch	Exception	Number	Product Type	Insulation	Reflectance	Reflectance	Emittance	(Optional)	Reflectance	Emittance	(Optional)
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NOTES

- Roof area covered by building integrated photovoltaic panels and solar thermal panels are exempt from the above Cool Roof requirements.
- Liquid field applied coatings must comply with installation criteria from section 110.8(i)4.

D. FENESTRATION/GLAZING AREAS ALLOWED (Section 150.2(b)1)						
01	02	03	04			
Alteration Type	Orientation	Maximum Allowed ft ²	Comments			

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Project Name:	Date Prepared:

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT					
1. I certify that this Certificate of Compliance documentation is accurate and complete.					
Documentation Author Name:		Documentation Author Signature:			
Company:		Signature Date:			
Address:		CEA/ HERS Certification Identification (if applicable):			
City/State/Zip:		Phone:			
RESPONSIBLE PERSON'S DECLAR	ATION STATEMENT				
 The information provided or I am eligible under Division 3 designer). That the energy features and Compliance conform to the I The building design features worksheets, calculations, pla I will ensure that a registered 	I performance specifications, materials, components, and manu equirements of Title 24, Part 1 and Part 6 of the California Code or system design features identified on this Certificate of Comp ns and specifications submitted to the enforcement agency for dropy of this Certificate of Compliance shall be made available or	liance are consistent with the information provided on other applicable compliance documents,			
Responsible Designer Name:		Responsible Designer Signature:			
Company:		Date Signed:			
Address:		License:			
City/State/Zip:		Phone:			

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.

C. ROOF REPLACEMENT (Prescriptive Alteration, Section 150.2(b)1H)

When 50% or more of the roof is being replaced the roofing requirements are triggered. Any areas of roof covered by building integrated photovoltaic panels and solar thermal panels (the area of roof not covered by photovoltaic panels would still need to meet any applicable cool roof requirements). Additionally, there are many alternatives/exceptions to when a cool roof is required.

When the roof is steep slope (pitch greater than 2:12) the roof requirements include a cool roof in climate zones 10-15. The minimum requirement is 0.20 Aged Solar Reflectance, 0.75 Thermal Emittance, or a minimum SRI of 16.

- 1. Method of Compliance: Indicate if the method of compliance is going to be based on Aged Solar Reflectance and Thermal Emittance, the Solar Reflectance Index (SRI), or an Exception.
- 2. Roof Pitch: Expressed as 4:12, for example, which means the roof rises 4 foot within a span of 12 feet. When roofs have multiple pitches the requirements are based on the pitch of 50% or more of the roof.
- 3. Exception: If meeting one of the exceptions. Indicate which exception is, or will be, met.

NOTES: EXCEPTIONS AND ALTERNATIVES FOR STEEP SLOPE ROOFS:

- (a) Mass roof 25 lbs/ft² or greater (uncommon situation such as sod roof);
- (b) Air space 1" from top of roof deck to bottom of roofing;
- (c) Roofing product has a profile ratio of rise to width of 1 to 5 for 50 percent or greater of the width of the roofing product;
- (d) Ducts already meet Section 150.1(c) insulation and duct leakage requirements;
- (e) Roof has R-38 insulation;
- (f) Roof has a radiant barrier;
- (g) No ducts are installed in the attic; or
- (h) R-4 insulation above the roof deck.

In climate zones 13 & 15, when there is a low slope roof (pitch 2:12 or less) the cool roof requirements are for a minimum Aged Solar Reflectance of 0.63, a minimum 0.75 Thermal Emittance, or a minimum SRI of 75.

NOTES: EXCEPTIONS AND ALTERNATIVES FOR LOW SLOPE ROOFS:

- (a) Mass roof 25 lbs/ft² or greater (uncommon situation such as sod roof);
- (b) No ducts are installed in the attic; or
- (c) Roof deck insulation—by installing roof deck insulation, a lower aged solar reflectance is required: R-2 (0.62-0.60), R-4 (0.59-0.55), R-6 (0.54-0.50), R-8 (0.49-0.45), R-12 (0.44-0.40), R-16 (0.39-0.35), R-20 (0.34-0.30), R-24 (0.29-0.25).

NOTE: If one of the exceptions above has been selected then the rest of Section C is Not Required.

- 4. CRRC Product ID Number: The CRRC Product ID Number is obtained from the Cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/results. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.
- 5. Product type: See Cool Roof Rating Council's directory. Generally product types include single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
- 6. R-value Deck Insulation: If one of the exceptions selected includes adding roof deck insulation, indicate the R-value of the insulation.
- 7. Proposed Initial Solar Reflectance: Based on the product chosen from the Cool Roof Rating Council's Rated Product Directory. If using default assumption indicate NA since the Aged Solar Reflectance is available.
- 8. Proposed Aged Solar Reflectance: Value is from the Cool Roof Rating Council's Rated Product Directory. If the aged value is not available, calculate the Aged Solar Reflectance using the Solar Reflectance Index (SRI) Calculation worksheet located on the California Energy Commission website or the aging equation ρ_{aged} =[0.2+ $\beta[\rho_{initial}$ -0.2], where $\rho_{initial}$ = the initial solar reflectance and soiling resistance β is listed by product type below.

VALUES OF SOILING RESISTANCE β BY PRODUCT TYPE

Product Type	CRRC Product Category	β
Field-Applied Coating	Field-Applied Coating	0.65
Other	Not A Field-Applied Coating	0.70

- 9. Proposed Thermal Emittance: From the product specification default value. If using a calculated SRI place the Thermal Emittance used to calculate SRI.
- 10. Proposed SRI: It is optional to meet the SRI but if chosen to do so, use the Solar Reflectance Index (SRI) Calculation Worksheet found on the California Energy Commission website http://www.energy.ca.gov/title24/.
- 11. Minimum Required Aged Solar Reflectance: Based on climate zone and roof slope.
- 12. Minimum Required Thermal Emittance: Based on climate zone and roof slope.
- 13. Minimum Required SRI: Based on climate zone and roof slope.

NOTE: If the cool roofing requirements will be met by a liquid field applied coating, Section 110.8(i)4 requires the coating be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the manufacturer.